



Optimal fish feed quantity for Leatherside Chub fry

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Introduction:

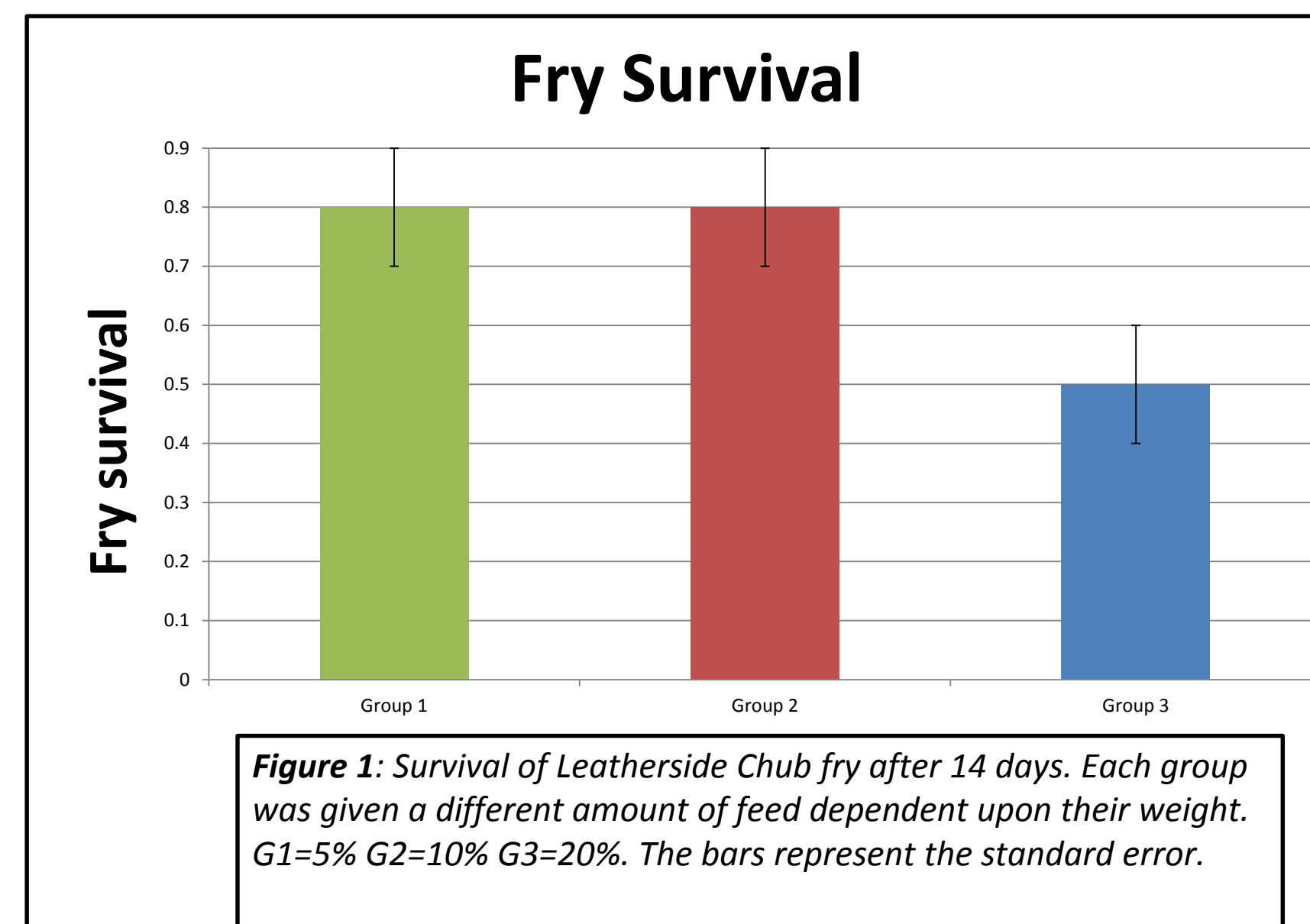
- Leatherside chub are a threatened species and little has been studied concerning how to optimally raise them in a controlled environment.
- Leatherside's are susceptible to fungal growth. This makes it difficult to balance how much feed to give the fry for their optimal development. Giving them an excess of feed can cause fungal blooms, which can kill the fry.
- Our goal was to better understand how much feed fry will eat at different stages of development without creating an excess of feed leading to fungal growth.

Methods:

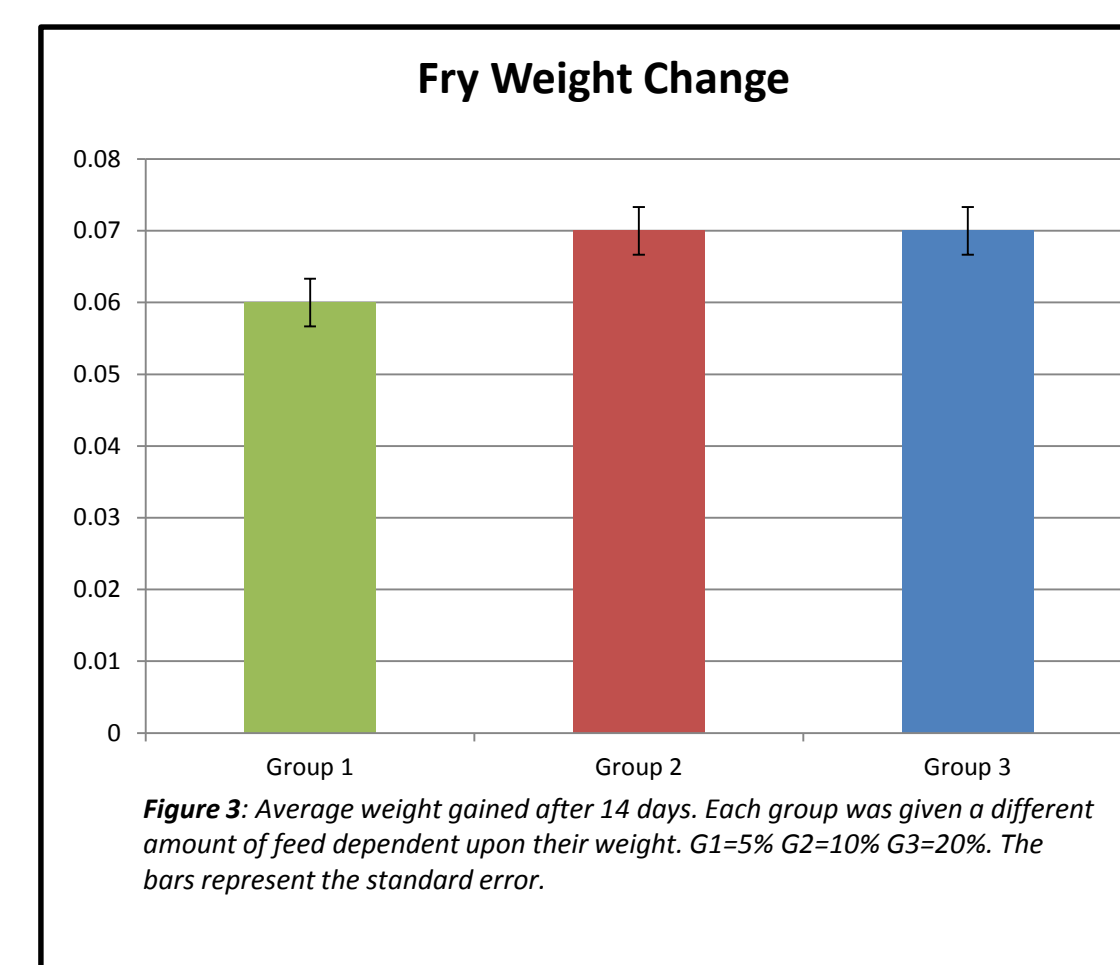
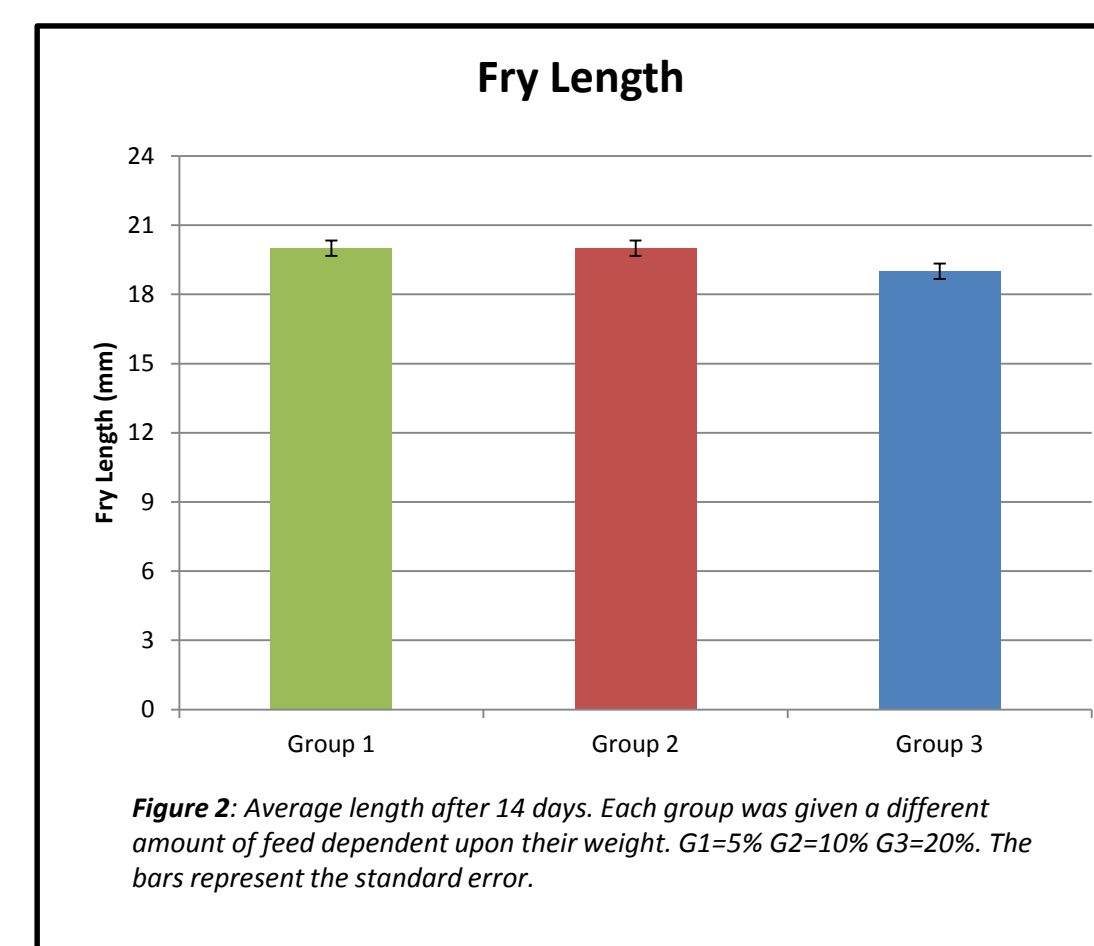
- The weight of the fry was determined by weighing the mortalities and extrapolating this weight to the others. The average was found to be 20 µg
- The fry were then split into three groups with three replicates for each group. Each system contained 20 fry for a total of 60 fry in each group and 180 fry overall.
- Each group was given a different amount of fish feed per day. For this study the feed given was Golden Pearl 100 µm.
- Group 1 received 5% of their body weight in fish feed per day (20 µg).
- Group 2 received 10% of their body weight in fish feed per day (40 µg).
- Group 3 received 20% of their body weight in fish feed per day (80 µg).
- After 14 days the fry were re-weighed and measured.

Results:

We found that group 3 had the most mortalities. As shown in Figure 1.



There appeared to be no noticeable difference in size and weight of the groups. This is demonstrated in Figures 2 and 3



Golden Pearl
Feed size used: 100 µm

Photograph from popscreem.com

Discussion:

From our study we were able to determine that providing the Leatherside Chub with 20% of their weight in feed per day, gave no size advantage over giving them 10%. We also were able to determine that providing 20% caused an excess of feed, which helped grow fungus lowering the survival of the fry.

There was insufficient weight gain between the three groups to identify the best possible feed quantity. Though there was less weight gained in group 1, it was an insubstantial amount. Unless further testing is done, this data doesn't provide sufficient evidence to feed the fry 10% over 5%.

It is important to note that group 1 was receiving only 20 µg of feed daily which was such a small quantity that few fry seemed capable of finding the feed. It is possible to theorize that the fry from group 1 didn't starve because of diatoms that may survive within the water.

Future Studies:

This study really should be done again with larger quantities of fry to make it easier to measure out the needed feed each day. With more feed in the water it would also be easier for the fry to find the feed.

During this study we had some younger fry that had not been included in this experiment. These fry were given a mixed diet of Golden Pearl and Artemia, and seemed to grow larger than the fry in the experiment. A study should be done to determine the effects of having a mixed diet on fry growth.

